

NOAA Climate Science & Services

Monthly Climate Update

A look back at July and the Year-to-Date

A preview of September-November

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Climate Scientist

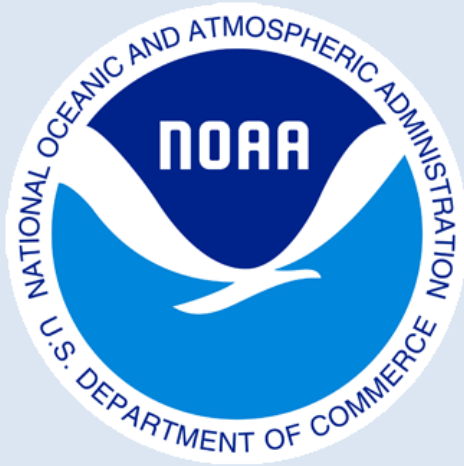
NOAA's National Climatic Data Center

Dennis Todey

State Climatologist and Professor
South Dakota State University

Anthony Artusa

Meteorologist and Seasonal Forecaster
NOAA's Climate Prediction Center

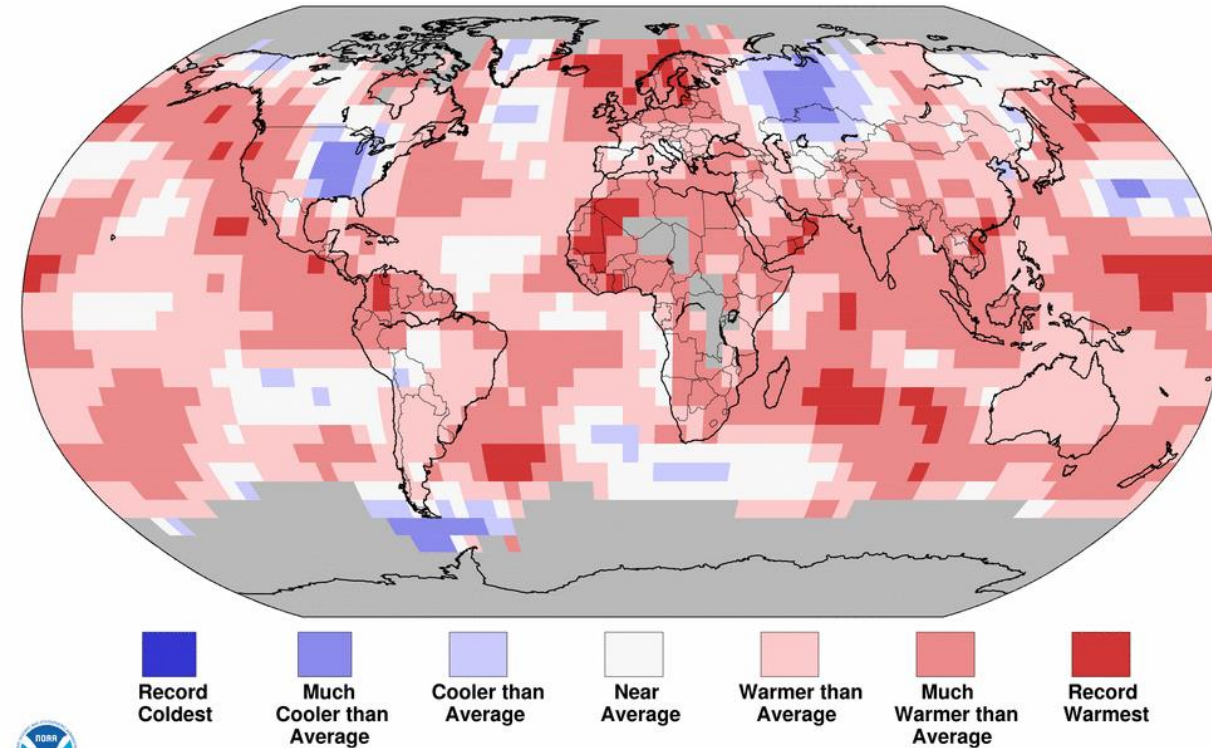


August 2014

Global Climate: July 2014

- **Global** temperature $+1.15^{\circ}\text{F}$ warmer than 20th century average:
4th warmest July on record (135 yrs)
- **Land** only: $+1.33^{\circ}\text{F}$ (10th warmest); **Ocean** only: $+1.06^{\circ}\text{F}$ (tied for warmest)

Global Temperature vs. Historical July values



Year-to-date global temperature: $+1.19^{\circ}\text{F}$ (tied, 3rd warmest)

Sea Ice Extent:

Arctic:

3.2M sq. mi.

4th smallest July on record

Antarctic:

6.7M sq. mi.

largest July on record

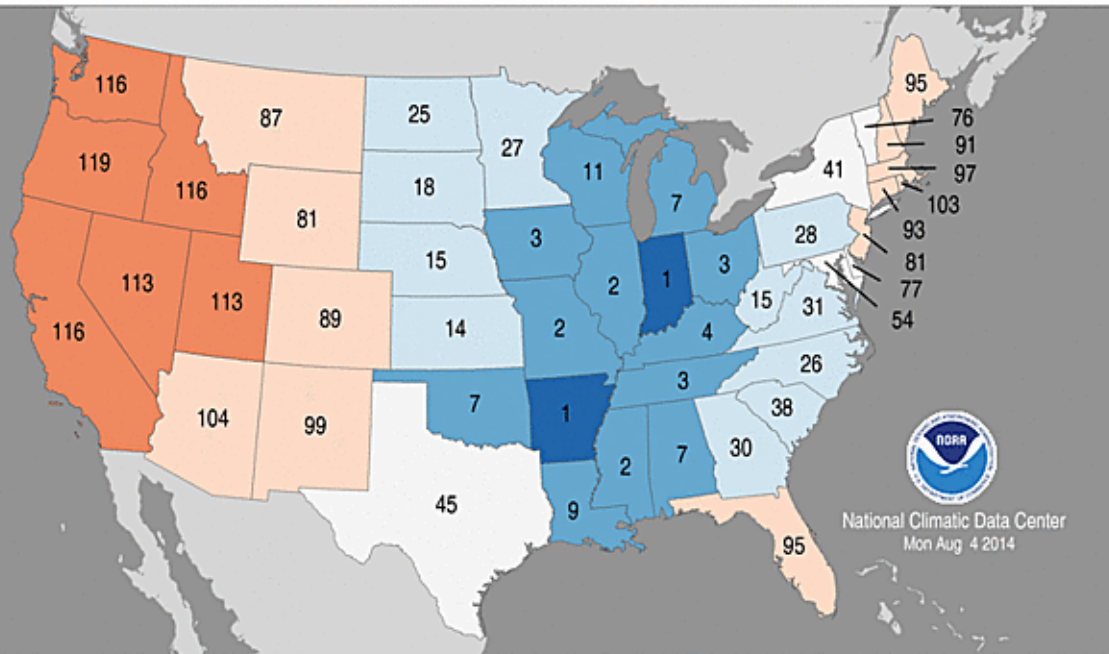
Wed Aug 13 08:13:40 EDT 2014

July 2014 Average Temperatures

CONUS:

73.3°F ... 0.3°F below 20th century avg ... “near average” ... coolest since 2009

Statewide Temperature Ranks, July 2014
Period: 1895-2014 (120 yrs)



Record Coldest
(1)

Much Below
Average

Below
Average

Near
Average

Above
Average

Much Above
Average

Record Warmest
(120)

- Above-average across West.
 - Much above average west of the Rockies.
- Below-average most of eastern CONUS:
 - Much below average (bottom 10%) from Great Lakes to Gulf.
 - Arkansas and Indiana: coolest July on record



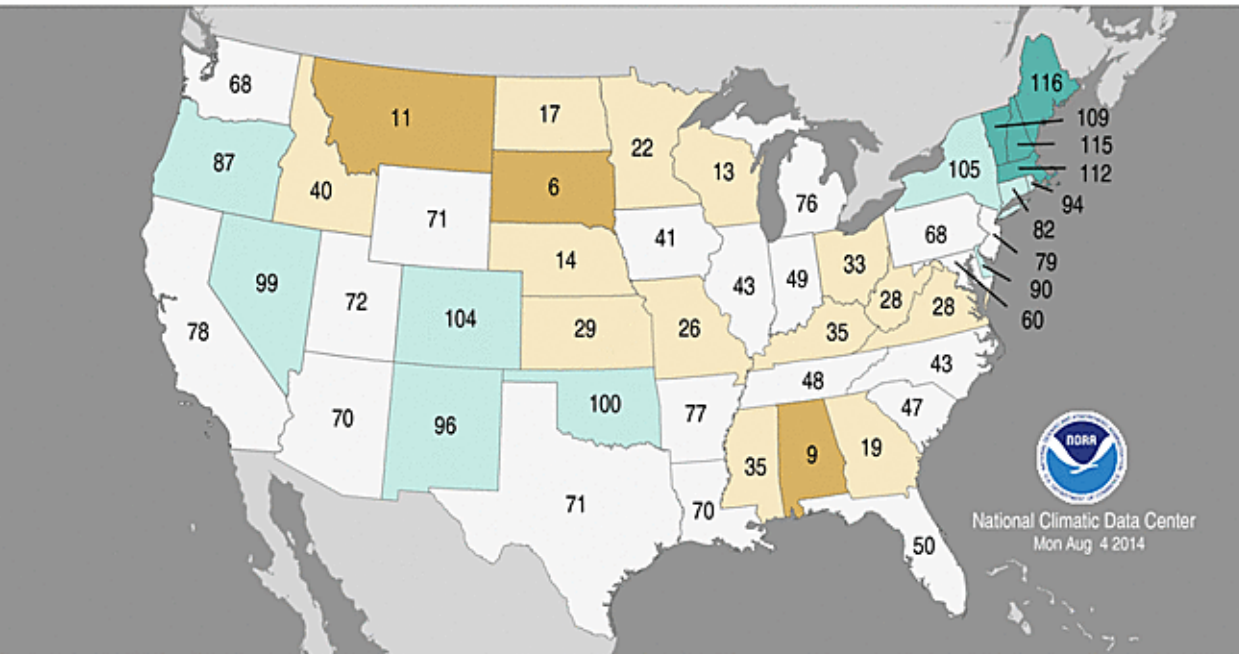
July 2014 Precipitation

CONUS:

2.55 in. ... 0.23 in. below 20th century avg ... “drier than average” ... 26th driest on record

Statewide Precipitation Ranks, July 2014

Period: 1895-2014 (120 yrs)



- Generally dry across most of CONUS.
 - Wetter than normal West, but height of dry season for Far West.
 - North American Monsoon brings beneficial rains to SW
- Wet in New England:
 - 5th wettest July for Maine; 6th wettest for New Hampshire



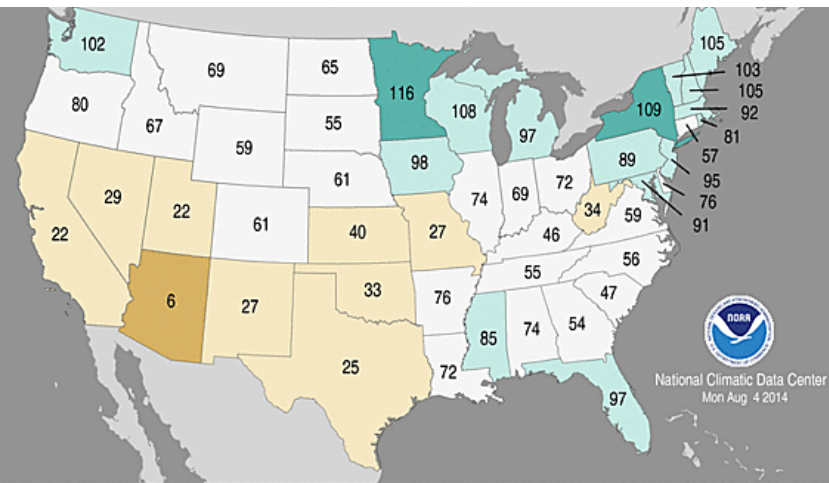
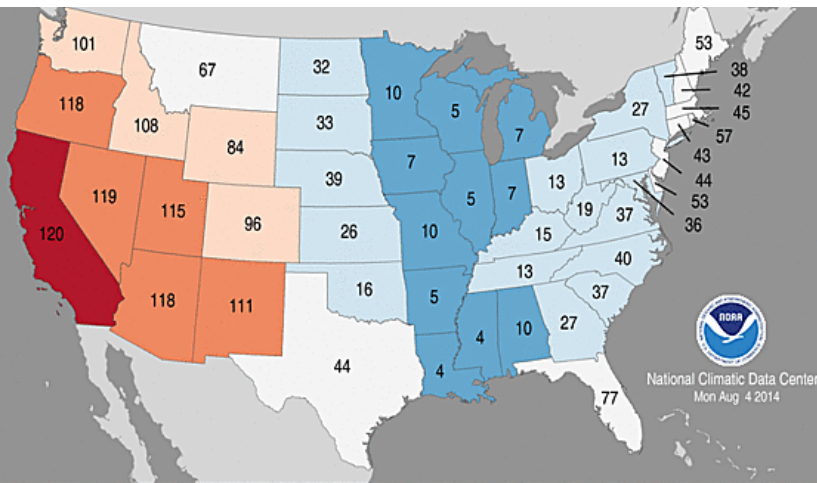
Year-to-Date Conditions

CONUS:

- 0.02°F warmer than 20th century average – coolest Jan-Jul since 1993
- 17.9 inches ... 0.21 inch below 20th century avg ... “near average”

Statewide Temperature Ranks Jan-Jul 2014
Period: 1895-2014

Statewide Precipitation Ranks Jan-Jul 2014
Period: 1895-2014



Record Coldest (1)
Much Below Average
Below Average
Near Average
Above Average
Much Above Average
Record Warmest (120)

Record Driest (1)
Much Below Average
Below Average
Near Average
Above Average
Much Above Average
Record Wettest (120)

- Warm in the West – CA record warm. AZ, NM, NV, OR, UT were top 10 warm.
- Cool in the East – 11 states were top 10 cold through July.

- Still dry in much of the Plains and Southwest, but with some improvements
- Wet in the Northeast, Upper Midwest. Minnesota 5th wettest.

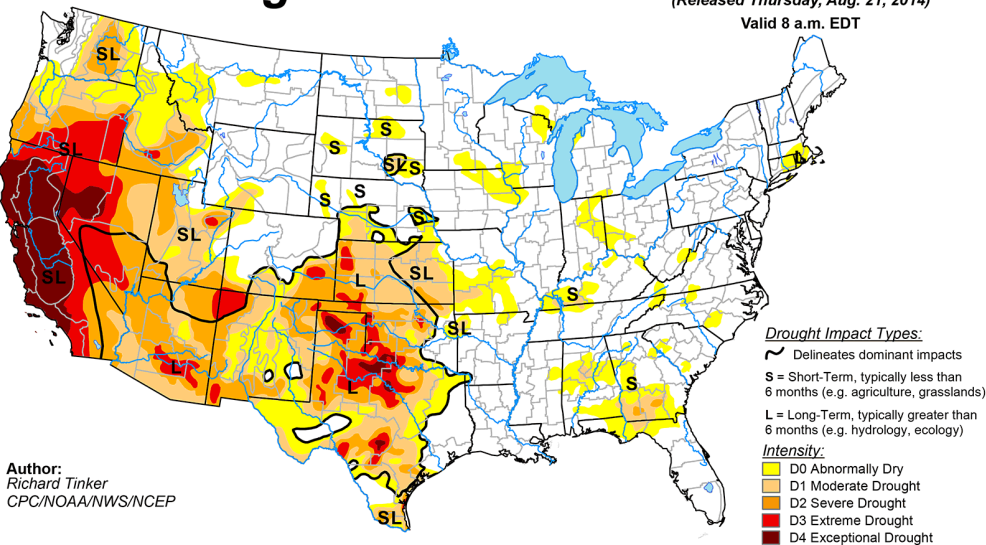
Current US Drought

33.6% of CONUS in Drought (↓½% since early July)

- **July:** Conditions improved in much of Southern Plains and New Mexico, but expanded or intensified in parts of the West, particularly Northern California
- **Since July:** More improvement in Southern Plains and New Mexico.

U.S. Drought Monitor

August 19, 2014
(Released Thursday, Aug. 21, 2014)
Valid 8 a.m. EDT



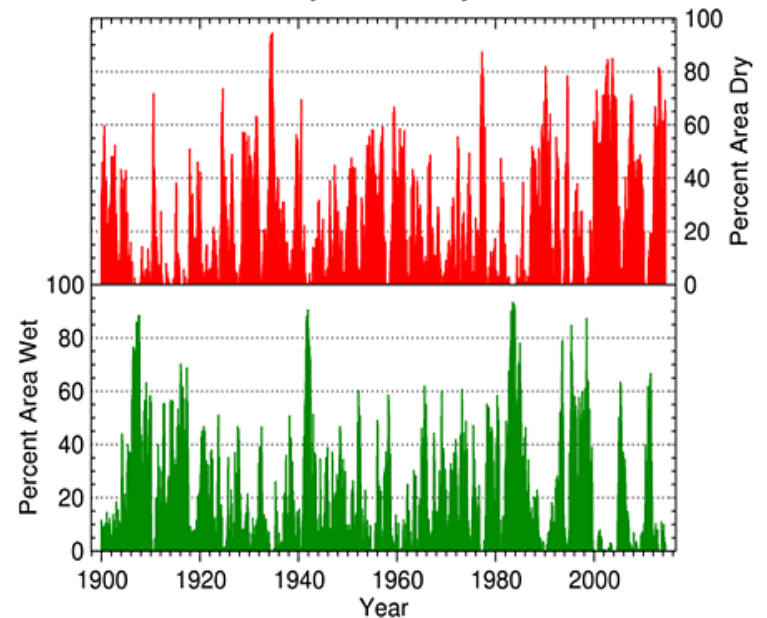
Author:
Richard Tinker
CPC/NOAA/NWS/NCEP

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.



<http://droughtmonitor.unl.edu/>

Western U.S. Percent Area Wet or Dry January 1900 - July 2014



National Climatic Data Center / NESDIS / NOAA



August 2014

Monthly Climate Webinar

<http://www.ncdc.noaa.gov/sotc/drought/2014/7>

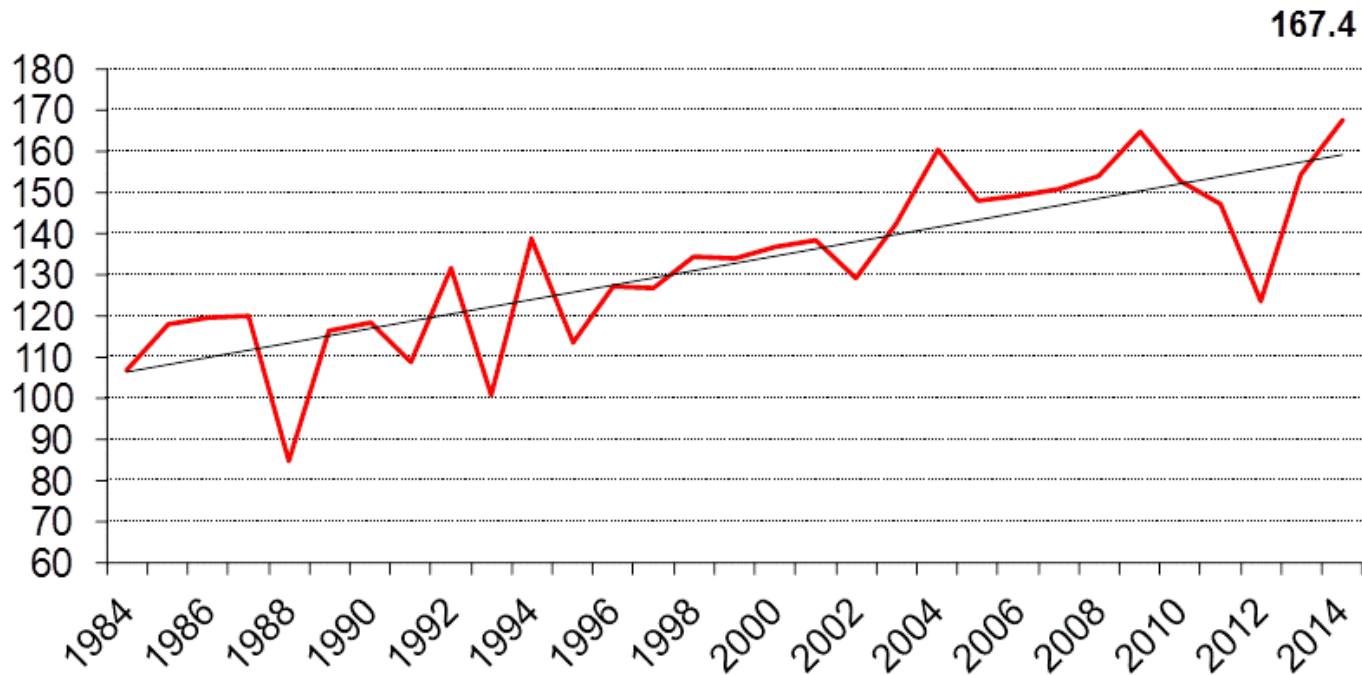
Climate Impacts Yields



U.S. Corn Yield

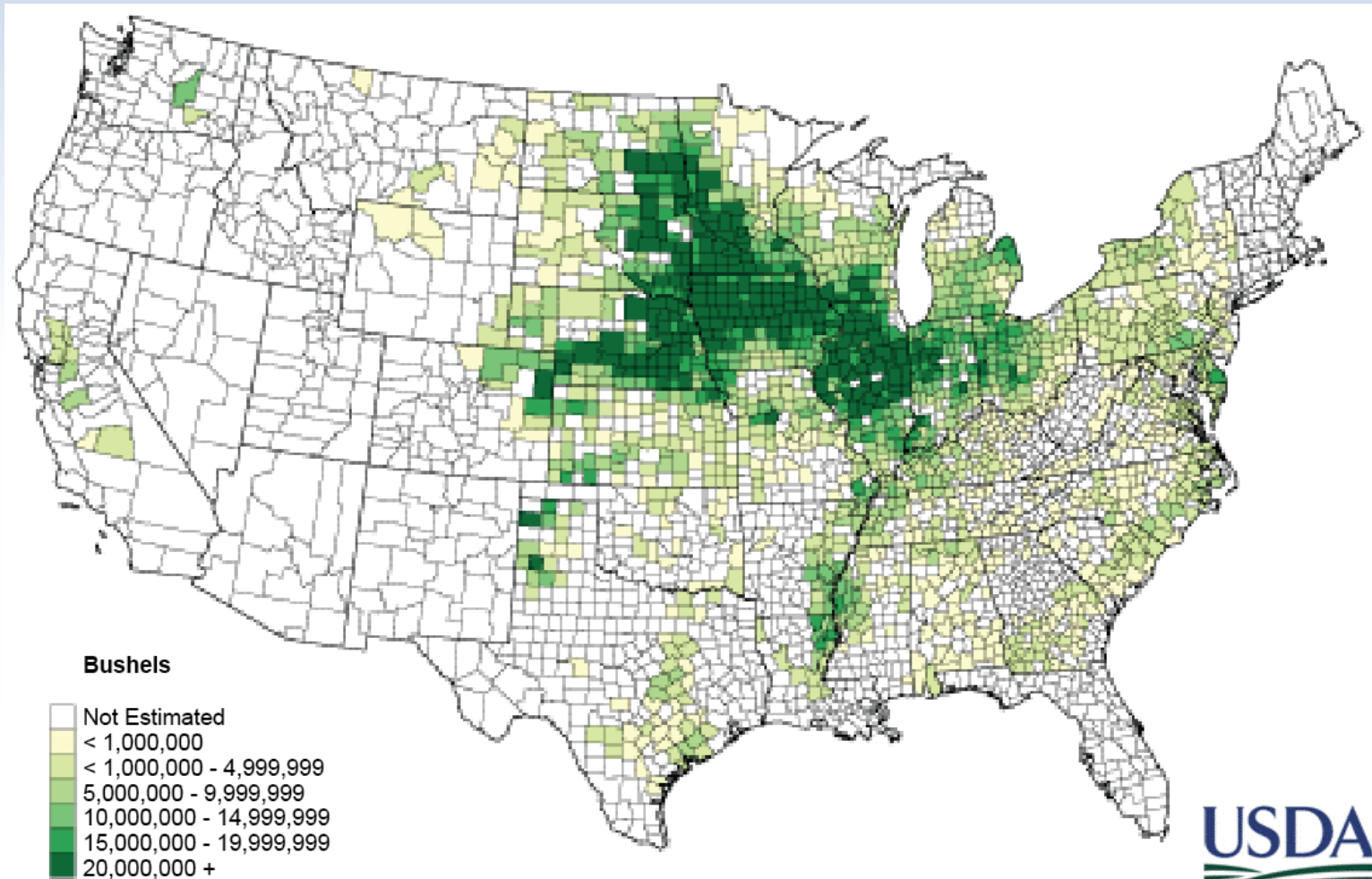


Bushels/Acre



Corn for Grain 2013

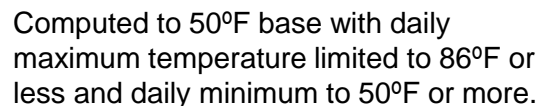
Production by County for Selected States



U.S. Department of Agriculture, National Agricultural Statistics Service



April 1 – August 16, 2014



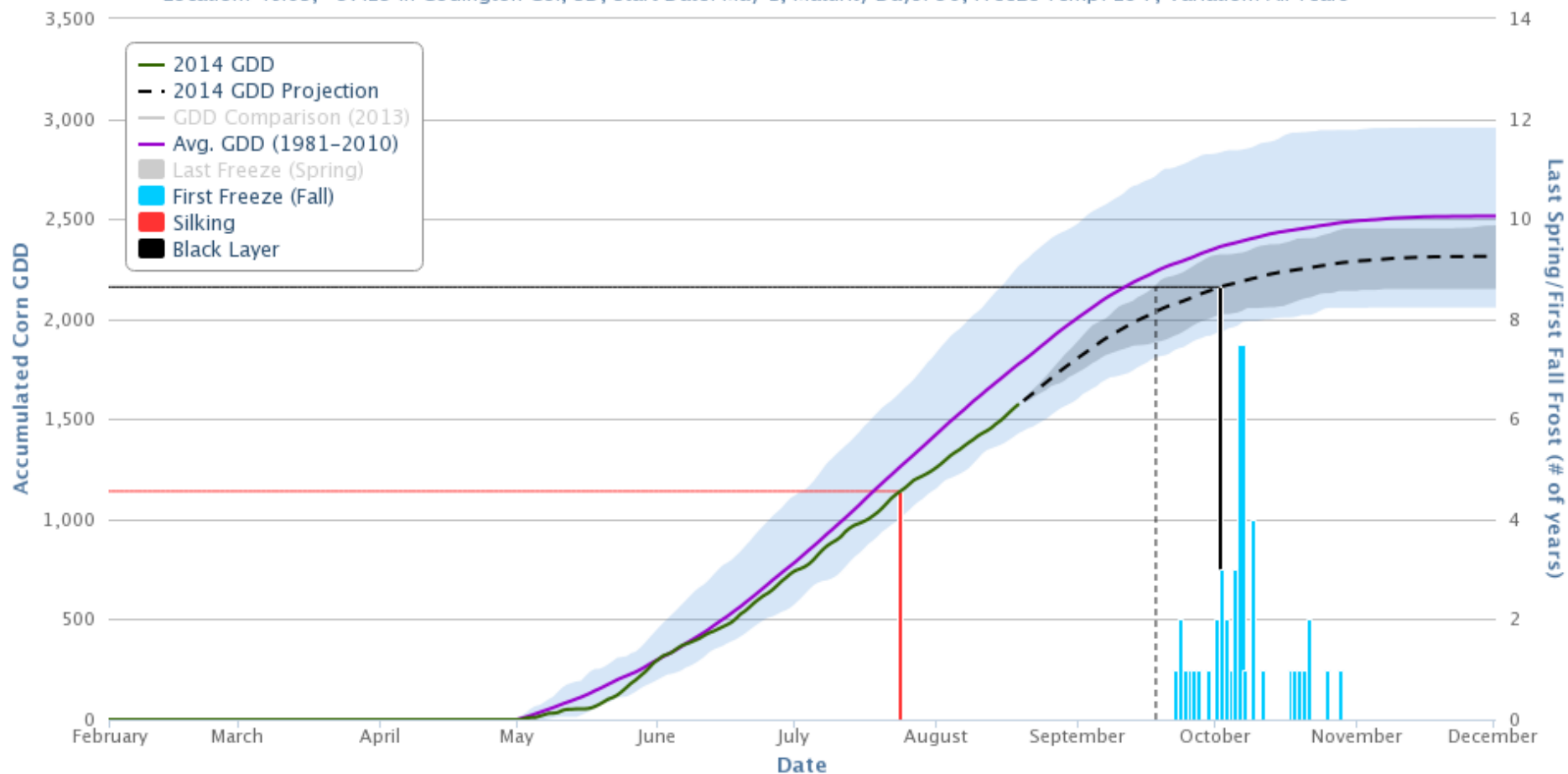
New Tools

- Despite some difference in climate change perceptions, there is serious concern about ongoing drought issues
- Surveys from U2U and Corn Cap projects
- USDA sponsored multi-state projects
- <http://www.sustainablecorn.org>
- <http://www.agclimate4u.org>



Corn Growing Degree Day Tool

Location: 45.03, -97.29 in Codington Co., SD, Start Date: May 1, Maturity Days: 90, Freeze Temp: 28°F, Variation: All Years



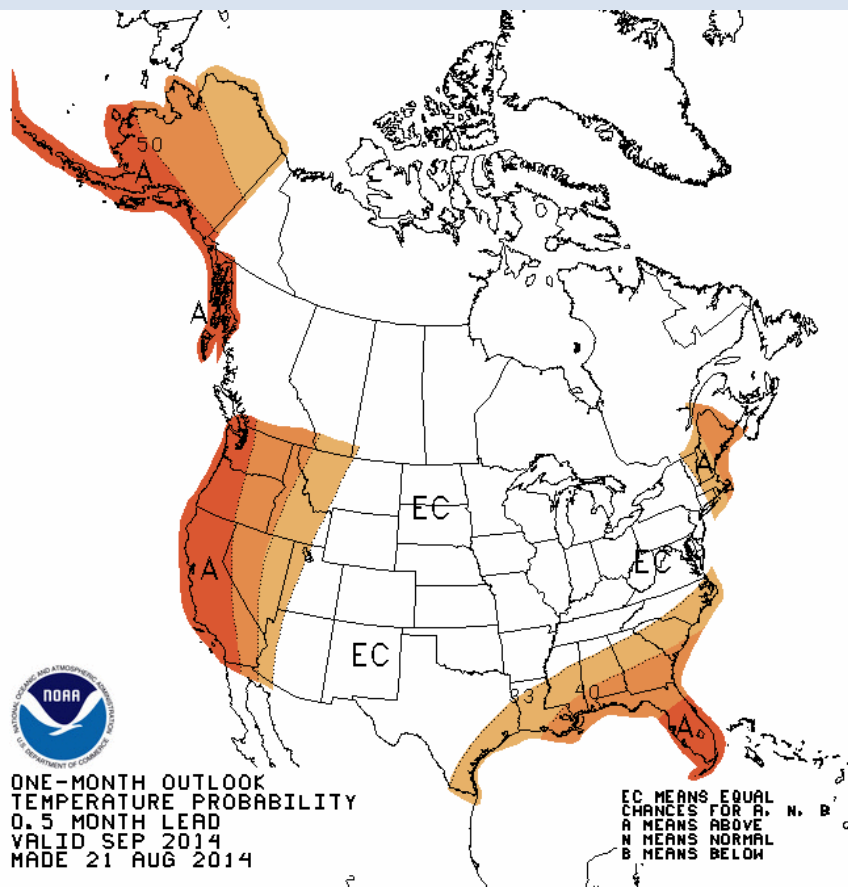
GDD Base 50/86 (degrees F); Created: 08/20/2014

<http://www.agclimate4u.org> Corn GDD Tool

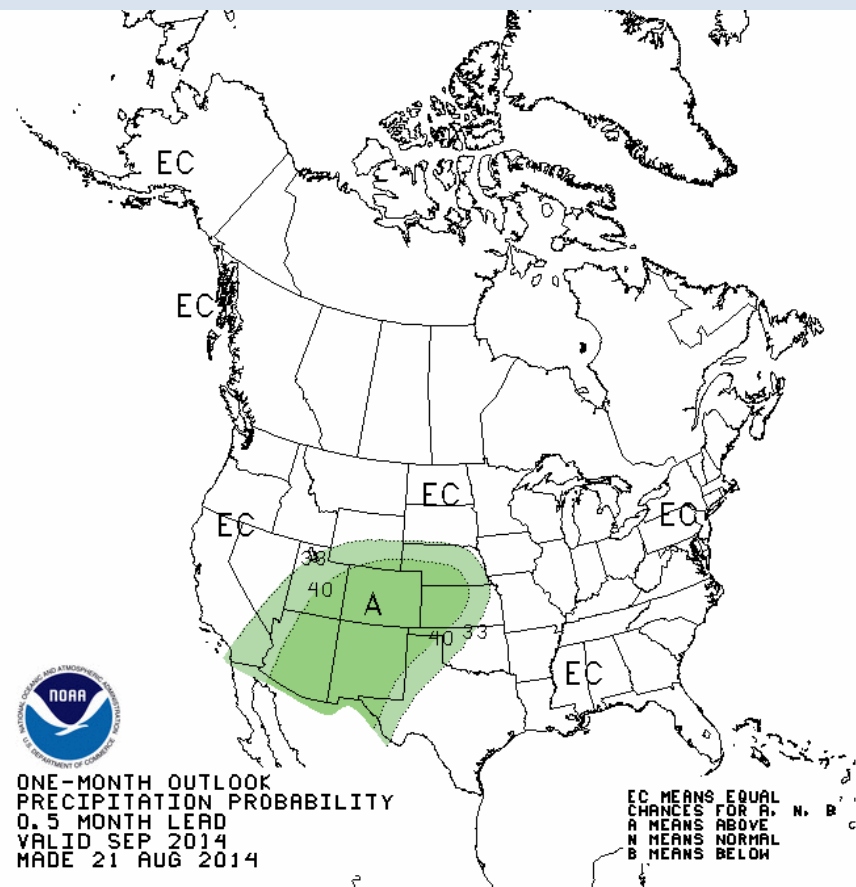


Monthly Forecast (September)

Sept Average
Temperature Probability

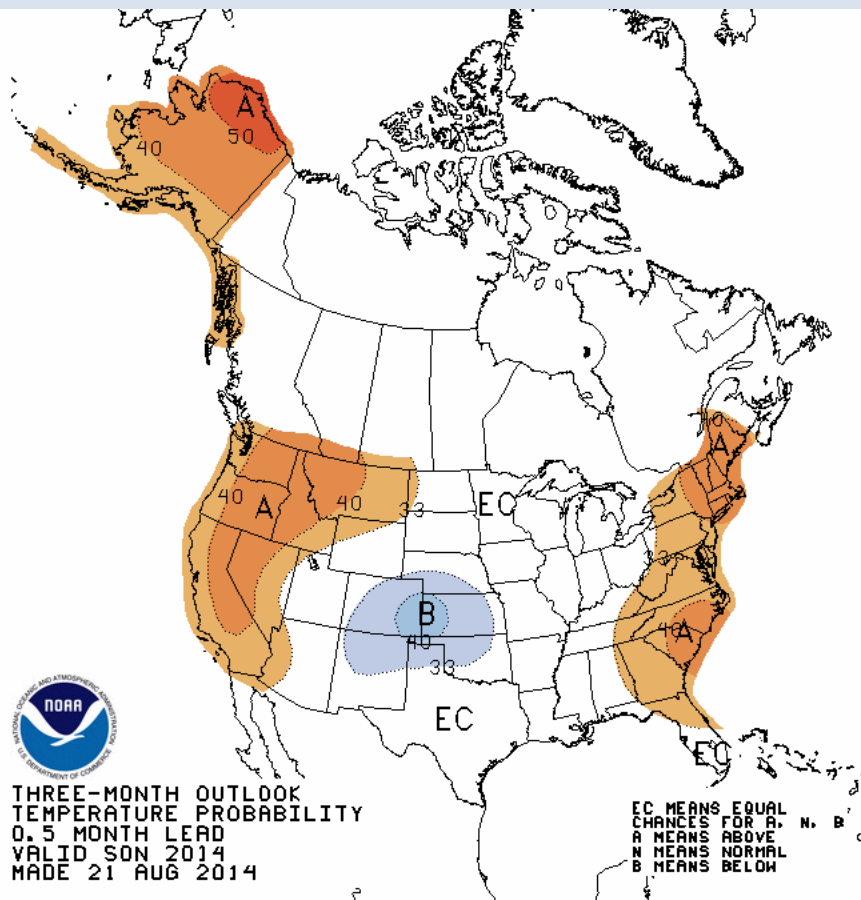


Sept Total
Precipitation Probability

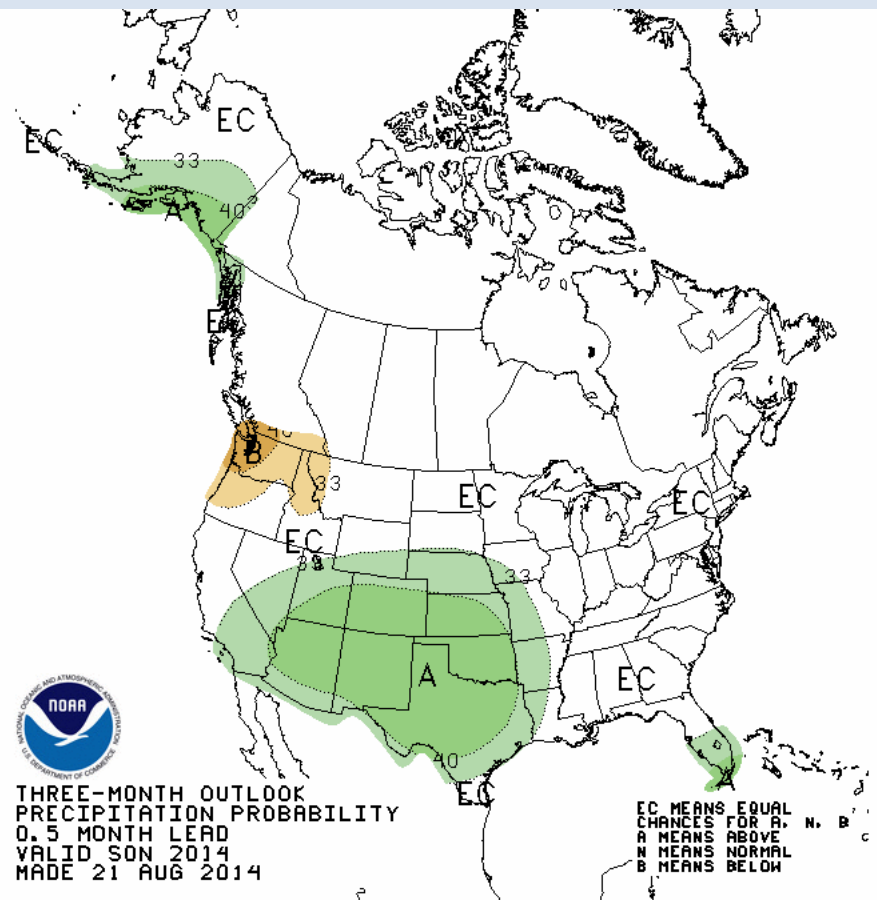


Seasonal Forecast (Sept-Oct-Nov)

Sept-Oct-Nov Average Temperature Probability



Sept-Oct-Nov Total Precipitation Probability



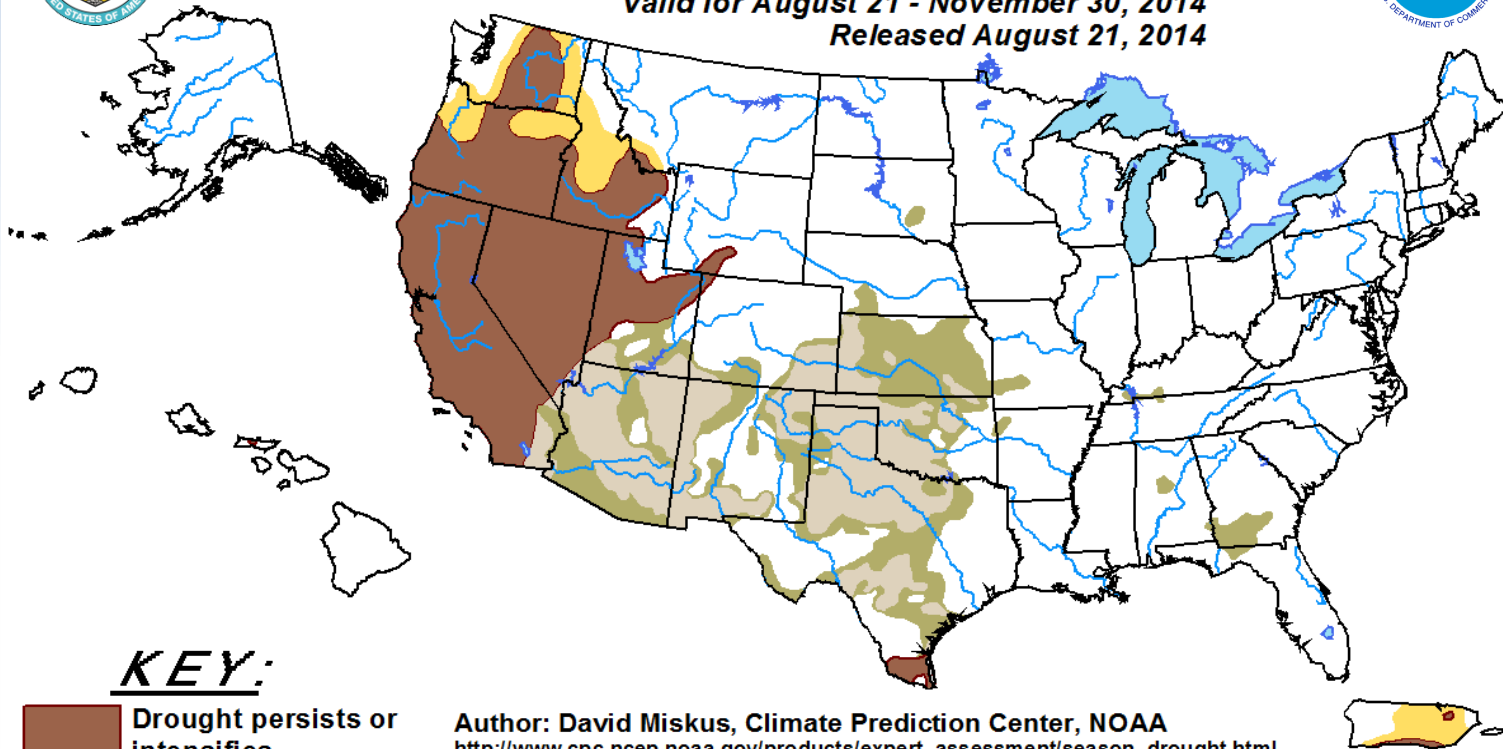
U.S. Drought Outlook

3-month forecast







U.S. Seasonal Drought Outlook

Drought Tendency During the Valid Period
Valid for August 21 - November 30, 2014
Released August 21, 2014



KEY:

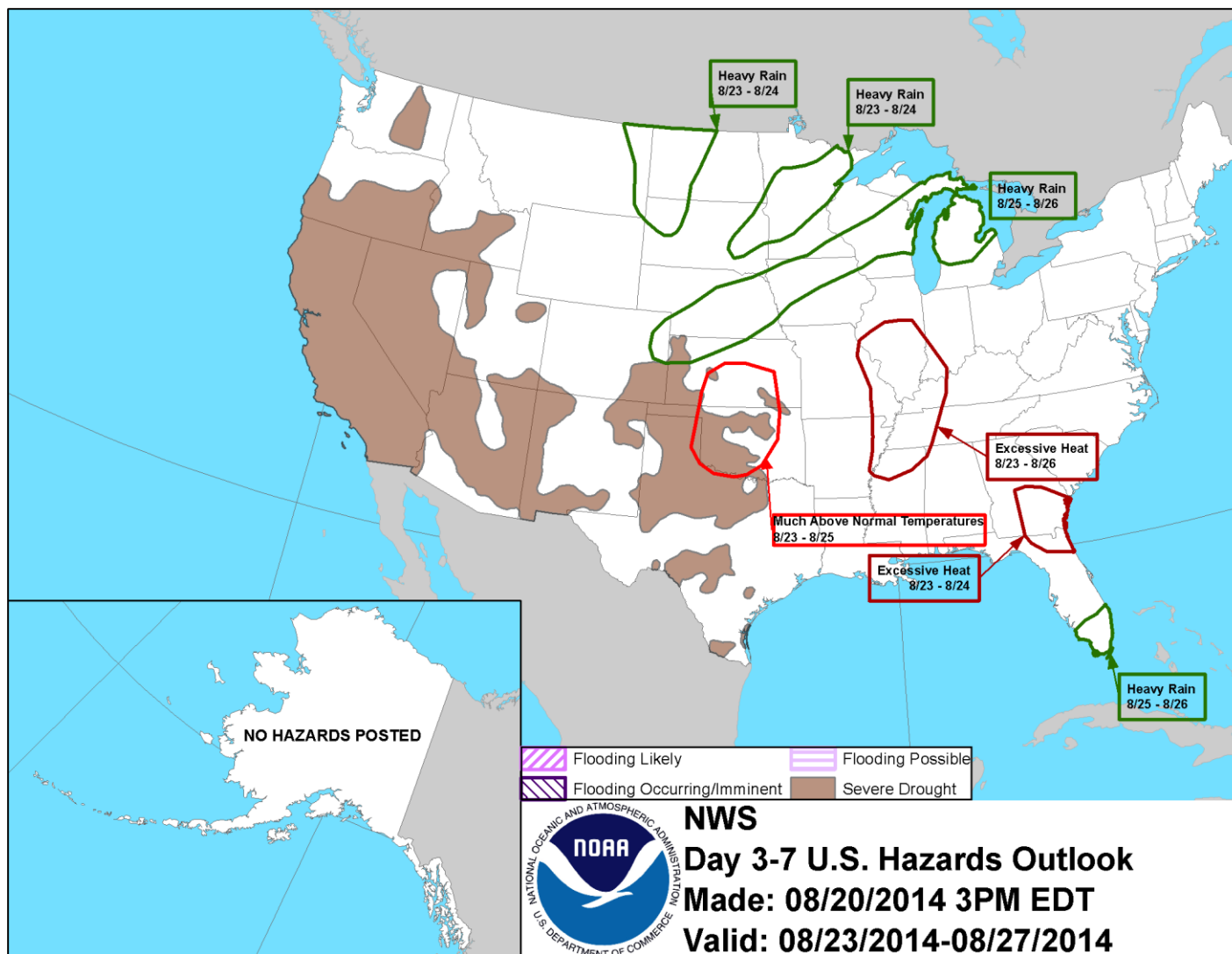
-  Drought persists or intensifies
-  Drought remains but improves
-  Drought removal likely
-  Drought development likely

Author: David Miskus, Climate Prediction Center, NOAA
http://www.cpc.ncep.noaa.gov/products/expert_assessment/season_drought.html

Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Short-term events -- such as individual storms -- cannot be accurately forecast more than a few days in advance. Use caution for applications -- such as crops -- that can be affected by such events. "Ongoing" drought areas are approximated from the Drought Monitor (D1 to D4 intensity). For weekly drought updates, see the latest U.S. Drought Monitor.

NOTE: The tan area areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period although drought will remain. The Green areas imply drought removal by the end of the period (D0 or none)

U.S. Hazards Outlook (3-7 Days)



For More Information



TODAY'S PRESENTATION:

- <http://www.ncdc.noaa.gov/sotc/briefings>

NOAA's National Climatic Data Center: www.ncdc.noaa.gov

- Monthly climate reports (U.S. & Global): www.ncdc.noaa.gov/sotc/
- Dates for upcoming reports: <http://www.ncdc.noaa.gov/monitoring-references/dyk/monthly-releases>

NOAA's Climate Prediction Center: www.cpc.ncep.noaa.gov

South Dakota Office of Climatology - <http://climate.sdstate.edu/>

U.S. Drought Monitor: <http://drought.gov>

Climate Portal: www.climate.gov

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